

**Stockton Deep Water Ship Channel (DWSC)
Demonstration Dissolved Oxygen Aeration Facility
August 2010 Monthly Report**

This report includes monthly plots for the Stockton Deep Water Ship Channel (DWSC) Demonstration Dissolved Oxygen (DO) Aeration Facility remote monitoring stations (Navigation Aid (NA) 40, 42, 43 and 48), handheld instrument data, California Data Exchange Center (CDEC) Rough and Ready Island (RRI) station data, and CDEC San Joaquin River at Garwood Bridge (SJG) station data for the month of August 2010. All reported data is provisional and subject to change.

Summary:

The Aeration Facility was operated from August 9th through August 19th for operational testing. The testing involved running one of the two pumps and discharging dissolved oxygen (DO) in the mid-30 mg/L range into the DWSC to monitor system efficiency and effectiveness.

The average monthly DO levels at all monitoring stations for August were above the California Regional Water Quality Control Board (RWQCB) San Joaquin River Basin Plan minimum water quality objective for DO of 5.0 mg/L from December 1st through August 31st. Monthly average DO concentrations for August ranged from 5.51 mg/L at NA43 to 6.15 mg/L at NA40.

It should be noted that data for NA40 and NA43 from August 27th through August 31st is missing due to a Coast Guard contractor relocating navigation aids 40 & 43 and removing the DWR equipment. The equipment was returned with minimal damage and reinstalled on September 3rd.

Minimum 15-minute DO concentrations recorded for all monitoring stations were below the 5.0 mg/L minimum water quality objective (see Table1). The monthly average remote monitoring station DO concentrations were within -0.35 to 0.29 mg/L of the RRI station data. There is no substantial difference between the DO measurements recorded with the handheld instrument and the remote stations. The monthly average handheld measured DO (at 12 foot depth) and the remote monitoring stations DO values were within -0.22 to 0.15 mg/L of each other.

The average monthly water temperature for August did not change from the July monthly average water temperature of 77.8 Fahrenheit (°F).

The August monthly average SJG flow was 25 cubic feet per second (cfs). The monthly average flow decreased 350 cfs from the July monthly average flow of 375 cfs.

Figures 1, 2, 3, and 4, and Tables 1 and 2 below present a summary of monthly data, and illustrates the discussion topics above.

Figure 1

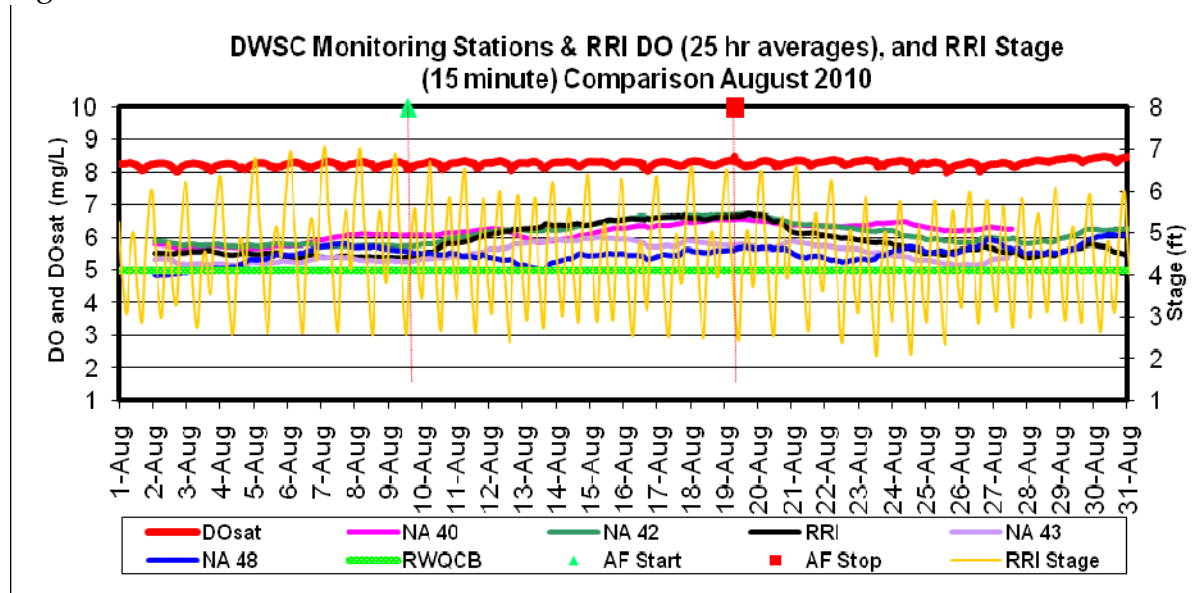


Figure 2

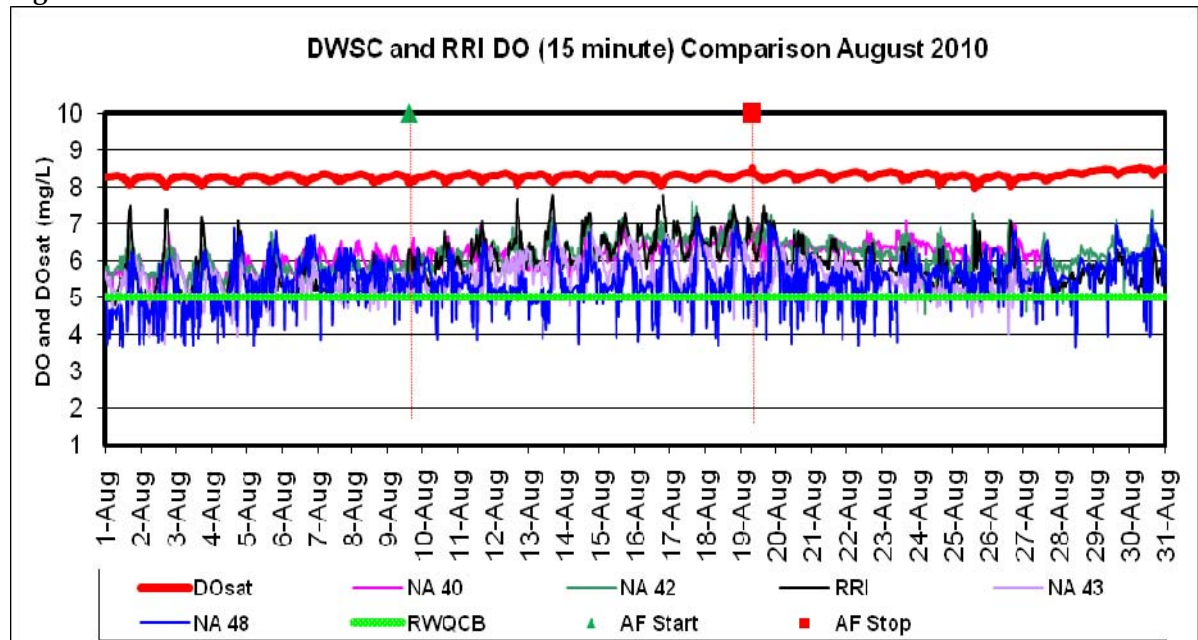


Figure 3

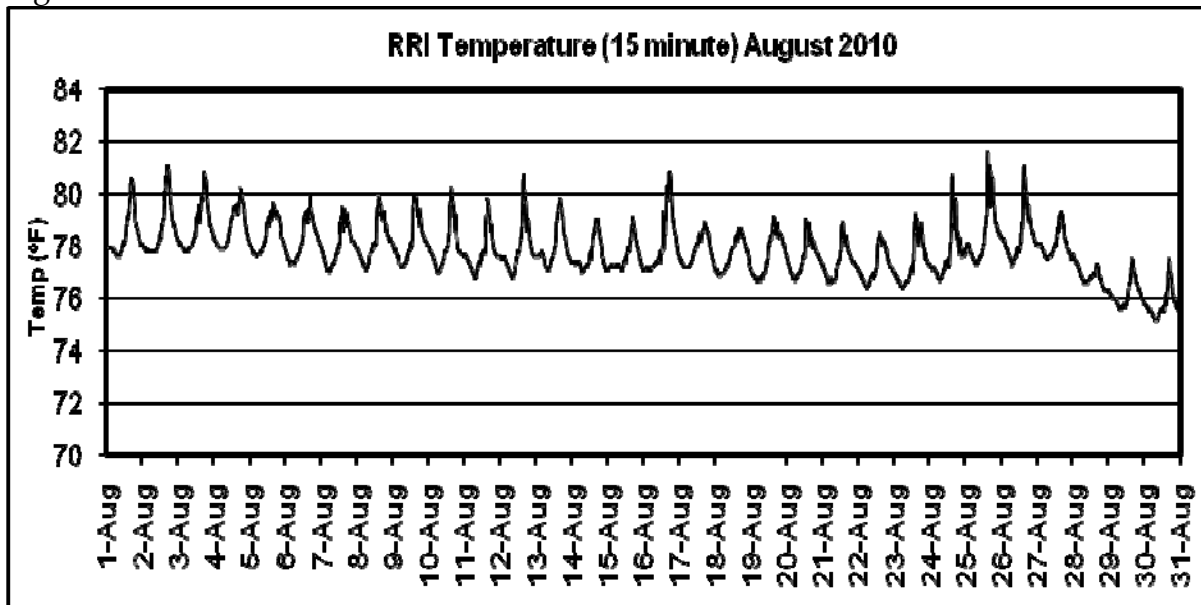


Figure 4

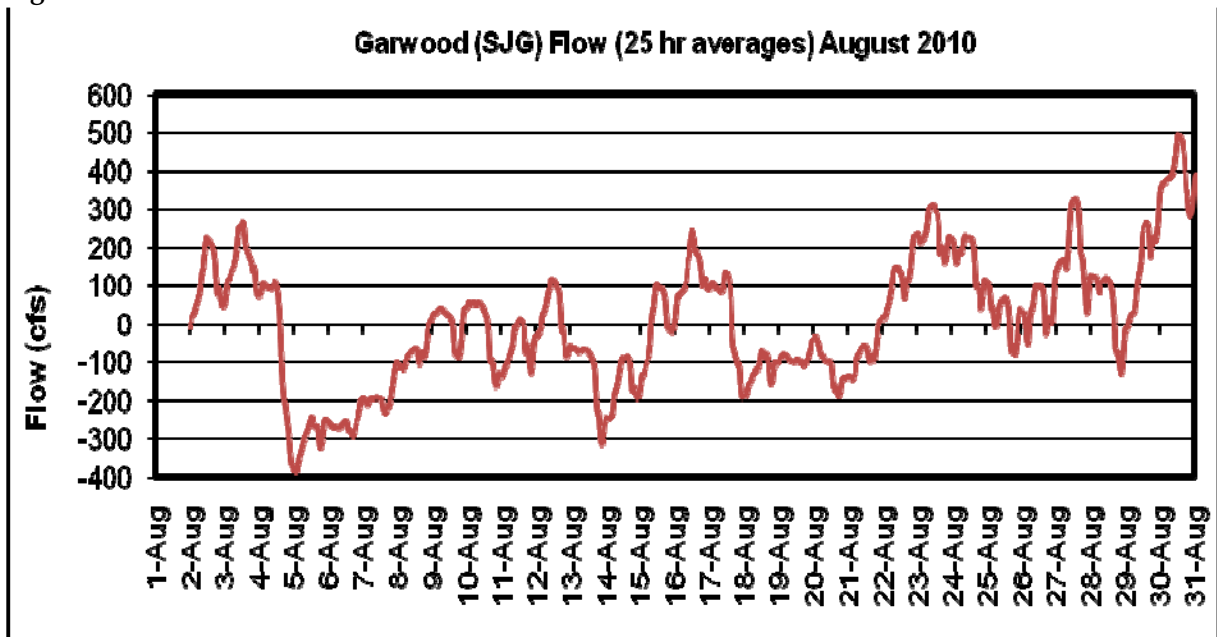


Table 1

YSI Remote Stations and RRI DO ¹ (mg/L) & Temp ¹ (°F)						
Aug-2010						
	RRI ² DO (mg/L)	NA40 DO (mg/L)	NA42 DO (mg/L)	NA43 DO (mg/L)	NA48 DO (mg/L)	RRI Temp (°F)
Monthly DO & Temp Averages	5.86	6.15	6.13	5.51	5.52	77.8
NA Stations and RRI Monthly Average Difference		0.29	0.27	-0.35	-0.35	
Monthly Min DO	4.60	4.76	4.56	3.75	3.66	
Monthly Max DO	7.80	7.09	7.56	6.92	7.15	
Monthly DO STDEV	0.61	0.35	0.42	0.45	0.59	
Monthly DO Median	5.80	6.19	6.11	5.50	5.53	

¹Z-Score outlier test was applied to remove anomalous recorded values.

²RRI DO data is from 3 foot depth. NA DO data is from 12 foot depth except NA48. NA48 DO data is from 9 foot depth starting August 24th, 2010.

Table 2

Handheld DO Measurements @ 12 ft Depth and YSI DO Measurements Comparison					
Aug-2010					
		NA40 DO (mg/L)	NA42 DO (mg/L)	NA43 DO (mg/L)	NA48 DO (mg/L)
Handheld Monthly ³ Averages		6.00	5.98	5.73	5.63
NA Stations and Handheld Monthly Average Difference		0.15	0.15	-0.22	-0.11

³Handheld monthly averages are based on the average weekly readings for the month

Additional Aeration Facility Associated Information:

DWSC Aeration Facility Operation

The Aeration Facility was operated from August 9th through August 19th for operational testing to monitor system efficiency and effectiveness.

DWSC Water Quality Stations Maintenance/Calibration

The North Central Region (NCR) Water Quality Evaluation Section serviced the four remote monitoring stations (NA40, 42, 43, and 48) in the DWSC on August 6th, 12th, 23rd, and 31st (except NA40 and 43 due to removal of the equipment by a Coast Guard contractor).

Head of Old River Barrier Status

None

Port of Stockton Dredging Activity

None

San Joaquin River Flow Changes

None

Port of Stockton Dock 19/20 Ship Activity

Days	Arrival	Departure
3	08/22/10	08/24/10

Please provide your feedback concerning our observations as well as your independent observations.